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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/319,906	06/14/1999	VEGENY NIKOLAEVICH KABLOV	RD-25712	5255

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05/06/2003

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EXAMINER

LIN, ING HOUR

ART UNIT

PAPER NUMBER

1725

DATE MAILED: 05/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No
09:319,906

Applicant(s)
Kablov et al

Examiner
Ing-Hour Lin

Art Unit
1725



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.

If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.

Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. 35 U.S.C. § 133.

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Mar 11, 2003
- 2a) This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9, 10, and 15-25 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9, 10, and 15-25 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are a) _____ accepted or b) _____ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) _____ approved b) _____ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) _____ Some* c) _____ None of.
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4 Interview Summary (PTO-413) Paper No. s |
| 2 Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5 Notice of Informal Patent Application (PTO-152) |
| 3 Information Disclosure Statement(s) (PTO-1449) Paper No. s | 6 Other |

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Part III DETAILED ACTION

Double Patenting

1. Claim 25 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 23. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

103 rejection

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

Office action:

A patent may not be obtained though the invention is not substantially disclosed or described as set forth in section 103 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(b) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 9-10 and 15-19 are rejected under 35 U.S.C. § 103 as being unpatentable over Bridgman in view of Giamei et al.

Bridgman (col. 2, lines 25-) teaches the claimed method for producing castings with directional and single crystal structure, comprising: placing a ceramic mold 2 having a starter cavity (conical end 18) in an electric furnace 4 having heating coil 6; preheating the mold to a temperature above the liquidus temperature of a casting alloy; lowering the heated mold having molten casting alloy from the heating furnace into an air cooling

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steel tank pipe 14 having an opening 12 and closed bottom 14 at a controlled rate (speed).

Bridgman fails to teach water-cooled means for the tank. However, Giamei et al (col. 6, lines 47+) teach the use of water-cooled means 41 for the purpose of effectively cooling the mold when heat is radiated from mold and cooled by the water-cooled means 39 and effectively directionally solidifying the molten alloy in the mold.

In view of the prior art as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Bridgman with water-cooled means 41 as taught by Giamei et al emitted from the heated mold surface is transmitted away by the tank surfaces in order to effectively enhancing radiation cooling and directionally solidify the molten alloy without drawing crack in the mold.

With respect to claims 15, Bridgman in view of Giamei et al fails to teach the use of truncated cross-section for the tank. However, the use of truncated cross-section for the tank having smaller base at the closed bottom portion would have been obvious to one of ordinary skill in the art for the purpose of effectively removing heat from the tank surface.

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3. Claims 20-25 are rejected under 35 U.S.C. § 103 as being unpatentable over Bridgman in view of Giamei et al and further in view of Kats et al.

Bridgman in view of Giamei et al fails to teach the use of a vacuum chamber. However, Kats et al col. 3, lines 23- teach the use of a vacuum chamber 2 for the purpose of controlling the degree of vacuum in the mold cavity and the heating furnace including preheating furnace 16 and an induction furnace below the preheating furnace for promoting effectively directional casting. Further, Kats et al teach the use of baffle 3 for the purpose of effectively shielding heat transfer between the heating chamber 4 and cooling chamber tank (chamber 5).

In view of the prior art as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided Bridgman in view of Giamei et al with a vacuum chamber, two furnaces and baffles as taught by Kats et al in order to effectively promoting directional casting.

With respect to claim 24, Bridgman in view of Giamei et al fails to teach the use of truncated cross-section for the tank. However, the use of truncated cross-section for the tank having smaller base at the closed bottom portion would have been obvious

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to one of ordinary skill in the art for the purpose of effectively removing heat from the tank surface.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner I.-H. Lin whose telephone number is (703) 308-3442 or Supervisor Tom Dunn whose telephone number is (703) 303-3318.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1148.

I.-H. Lin / *IL*

April 30, 2003

T. Dunn
TOM DUNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700